

In re Patent Application of:  
**WEN ET AL.**  
Serial No. 10/723,840  
Filing Date: **NOVEMBER 26, 2003**

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#### REMARKS

The Examiner is thanked for the thorough examination of the present application, and for correctly allowing Claims 16-21 and indicating the allowability of the subject matter of Claims 4, 6-8, 13, and 26. Independent Claims 1 and 22 have been amended to more clearly define the subject matter thereof over the prior art. Support for the amendments may be found in FIG. 1 and on page 7, lines 3-11 of the originally filed specification, for example. Additionally, independent Claims 28 and 29 are newly added and respectively include the allowable subject matter of dependent Claims 4 and 13, which (along with intervening dependent Claim 12) have been canceled. No new matter is being added.

In view of the amendments and the supporting arguments presented in detail below, it is submitted that all of the claims are patentable.

#### I. The Claimed Invention

The present invention is directed to a multiple-band antenna having first and second operating frequency bands. As recited in independent Claim 1, for example, the antenna includes a first patch structure and second patch structure electrically coupled to the first patch structure. A first slot structure is disposed between a first portion of the first patch structure and the second patch structure and has a distal end portion and a proximal end portion. Furthermore, a second slot structure is disposed between a second portion of the first patch structure

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and the second patch structure and has a distal end portion and a proximal end portion. Moreover, the proximal end portions of the first and second slot structures are substantially parallel to one another, and the distal end portions of the first and second slot structures diverge from one another.

Independent Claim 22 is directed to a related mobile wireless communications device. This claim has been amended similarly to Claim 1 to recite that the first and second patch structures have proximal and distal end portions, that the proximal end portions of the first and second slot structures are substantially parallel to one another, and that the distal end portions of the first and second slot structures diverge from one another.

## **II. The Claims Are Patentable**

### **A) Edimo et al.**

The Examiner rejected independent Claim 1 based upon U.S. Patent Publication No. 2003/0011521 to Edimo et al. Edimo et al. is directed to a multi-band antenna for a radio communication apparatus which includes a conductive patch having two sinuous slots 3 and 4, a ground, a short circuit connection connecting the patch to the ground, and a feed connection connected to the patch. See, e.g., FIG. 1 and paragraph 0057 of Edimo et al.

As noted above, independent Claim 1 has been amended to recite that the first and second patch structures have proximal and distal end portions, that the proximal end portions of the

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---

first and second slot structures are substantially parallel to one another, and that the distal end portions of the first and second slot structures diverge from one another. In stark contrast, the slots of the Edimo et al. antenna do not have diverging portions as recited in Claim 1. Rather, Edimo et al. states that the two slots "preferably have contours of similar shape," as noted in paragraph 0057, and these slots are positioned laterally next to one another (see, e.g., FIGS. 1-3 and 6).

Accordingly, not only does Edimo et al. fail to teach the noted claim recitation, it actually teaches away from such a configuration by stating that similarly shaped slots should be used. It is therefore respectfully requested that the rejection of Claim 1 based thereon be withdrawn.

B) Ying

The Examiner also rejected independent Claims 1 and 22 based upon U.S. Patent No. 6,343,208 to Ying. Ying is directed to a built-in patch antenna for a cell phone which includes patch elements of different sizes capable of being tuned to different frequency bands. On each patch element a slot divides the patch element into sub-parts. Each sub-part of a patch element is structured to be resonant at a frequency in the same frequency band to which the patch element is tuned. See, e.g., col. 4, line 63 through col. 5, line 47 of Ying.

Once again, independent Claims 1 and 22 have been amended to recite that the first and second patch structures have

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proximal and distal end portions, that the proximal end portions of the first and second slot structures are substantially parallel to one another, and that the distal end portions of the first and second slot structures diverge from one another. While Ying discloses a variety of slot configurations, none of these configurations includes first and second slot structures as recited in amended Claims 1 and 22. As such, it is respectfully requested that the rejection of these claims based upon Ying also be withdrawn. .

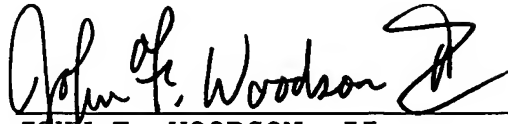
#### CONCLUSIONS

Accordingly, it is submitted that independent Claims 1 and 22 are patentable over the prior art. Their respective dependent claims, which recite yet further distinguishing features, are also patentable over the prior art and require no further discussion herein. A Notice of Allowance is therefore respectfully requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "John F. Woodson II", written over a horizontal line.

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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 13<sup>th</sup> day of March, 2006.

*Junior Nathan Kemmer*